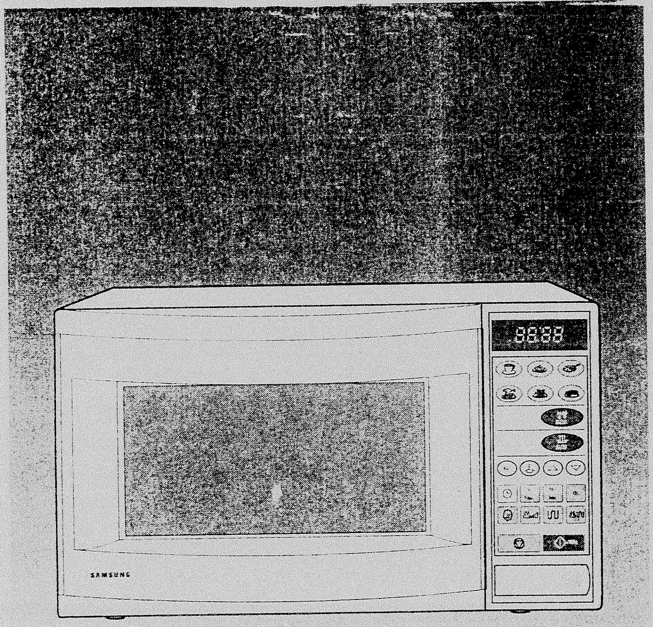
SAMSUNG

# MICROWAVE OVEN
## M9G45

# SERVICE Manual

### MICROWAVE OVEN



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**SEPOL**

# 1. Precaution

## 1-1. Safety Precaution ( ⚠ )

1) Pacemaker wearers must consult their physician before attempting to service or repair a microwave oven.
   For additional advice on this subject, write to the manufacturer of your pacemaker.
2) *The product should be serviced only by qualified personnel.*
3) Though the product has been manufactured in compliance with the Federal performance Standard 21 CFR Subchapter J(DHHS), it is very important when servicing to avoid being exposed to excessive microwave radiation. All the repairs should be performed in accordance with the procedures described in this manual.
4) Use only the identical parts as listed in the parts list of this manual in order to comply with the Federal performance Standard 21 CFR Subchapter J(DHHS).
5) In the event of suspected microwave energy leakage in excess of 5mW/cm2, please notify;

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6) Repair microwave oven at no charge to the owner for excessive microwave emission level.
7) Ascertain the cause of the excessive leakage and instruct the owner not to use the unit until the oven has been brought into compliance.
8) If the oven is operated with the door open, please advise the owner not to use the oven and contact the manufacturer and CDRH immediately.
9) There are special components used in the microwave oven which are important for safety. These parts are marked with a on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

## 1-2. Servicing Precaution ( ☞ )

### PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(a) Do not operate or allow the oven to be operated with the door open.

(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and then make repairs as necessary:
   (1) Interlock operation
   (2) proper door closing
   (3) seal and sealing surfaces (arcing, wear, and other damage)
   (4) damage to or loosening of hinges and latches
   (5) evidence ot dropping or abuse.

(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.

(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before g the oven to the owner.

(e) A Microwave leakage check compliance with the Federal performance standard should be performed on each oven prior to release to the owner.

# 2. Specifications

**SPECIFICATIONS**

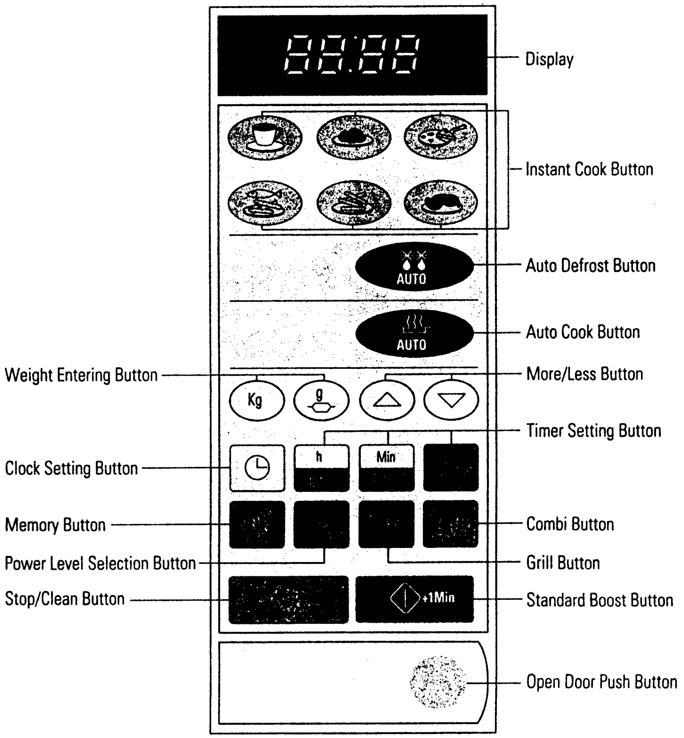
| | |
|---|---|
| TIMER | 99 MINUTES 90 SECONDS |
| POWER SOURCE | 230V 50Hz, AC |
| POWER CONSUMPTION | MICROWAVE : 1,500W<br>GRILL: 1,300W |
| OUTPUT POWER | FROM 90W TO 900W (10 LEVEL POWER) →<br>(IEC-705 TEST PROCEDURE) |
| OPERATING FREQUENCY | 2,450MHz |
| MAGNETRON | OM75P(31) |
| COOLING METHOD | COOLING FAN MOTOR |
| OUTSIDE DIMENSIONS | 517(W) x 317(H) x 433(D) |

| POWER LEVEL | | ON TIME | OFF TIME |
|---|---|---|---|
| 10% | 90W | 4 sec | 26 sec |
| 20% | 180W | 7 sec | 23 sec |
| 30% | 270W | 10 sec | 20 sec |
| 40% | 360W | 13 sec | 17 sec |
| 50% | 450W | 16 sec | 14 sec |
| 60% | 540W | 19 sec | 11 sec |
| 70% | 630W | 22 sec | 8 sec |
| 80% | 720W | 25 sec | 5 sec |
| 90% | 810W | 28 sec | 2 sec |
| 100% | 900W | 30 sec | 0 sec |

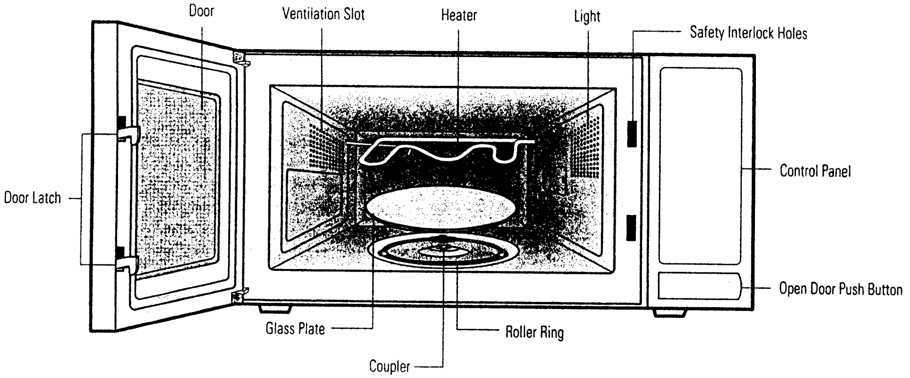
# 3. Comparing Chart

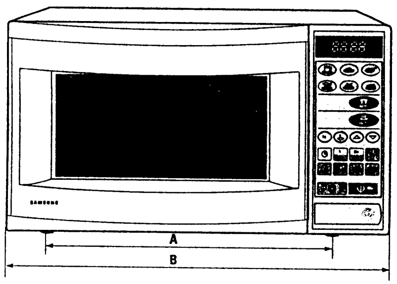
| MODEL / FEATURE | M9G45 |
|---|---|
| MORE/LESS | ○ |
| AUTO COOK/DISH | ○ |
| AUTO DEFROST | ○ |
| TIME COOK | ○ |
| POWER LEVEL | ○ |
| INSTANT COOK | ○ |
| MEMORY | ○ |
| BOOST | ○ |
| CHILD LOCK | ○ |
| CLOCK | ○ |
| GRILL | ○ |
| COMBI | ○ |

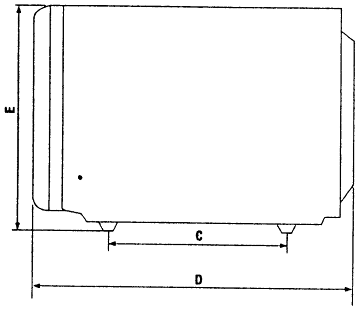
# 4. Control Panel



# 5. Features & External Views


Door
Ventilation Slot
Heater
Light
Safety Interlock Holes
Control Panel
Door Latch
Open Door Push Button
Glass Plate
Roller Ring
Coupler



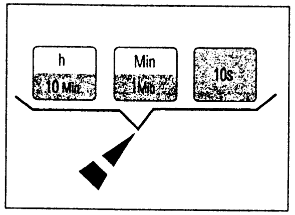


| SPEC / MODEL | A | B | C | D | E |
|---|---|---|---|---|---|
| M9G45 | 380mm | 517mm | 232mm | 433mm | 317mm |

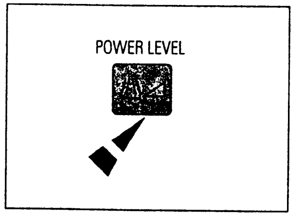
# 6. Operation Instruction

## Quick Reference Guide

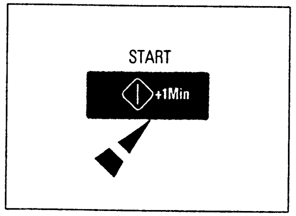
I want to cook some food


h
10 Min
Min
1Min
10s

Place the food in the oven. Select the cooking time by pressing the 10 Min., 1 Min. or 10 SEC. button as required.

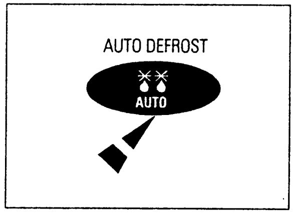

POWER LEVEL

Press the POWER LEVEL button once if you want to change the POWER LEVEL. Press the pad repeatedly until the desired power level is displayed.

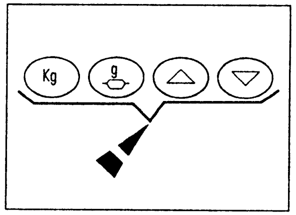


Press START to start cooking (The oven will beep four times when cooking is finished).

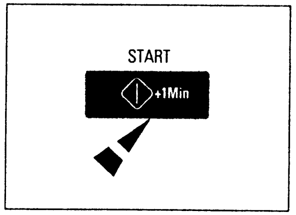
I want to defrost some food


AUTO DEFROST
AUTO

Place the frozen food in the oven and select the food category by pressing the AUTO DEFROST button as required.

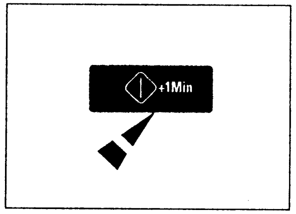


Select the weight by pressing the kg, g buttons and may control the defrost condition by pressing the ▲ ,▼ buttons as required



Press START to start defrosting.
The oven beeps ten times at a point during the defrosting period to remind you to turn the food over.
Press START to complete defrosting.

I want to cook for an extra minute



Leave the food in the oven.
Press +1 Min once for each extra minute you wish to add.

## Setting the Time

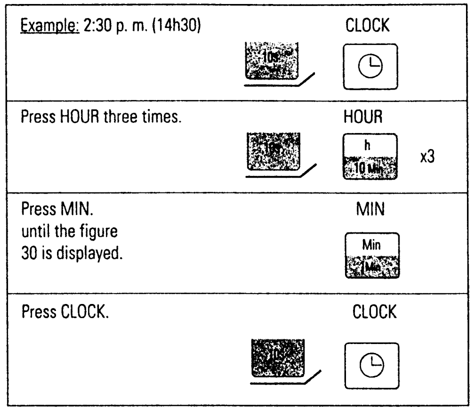
**Your microwave oven has a 24-hour and 12-hour clock, you must set the clock:**

*** When you first install your microwave oven**

*** After a power failure**

NOTE: Do not forget to reset the clock when you switch from summer to winter time and vice versa.

1) Press CLOCK button once, the display indicates 24H.
   If you press CLOCK button twice, the display indicates 12H.
2) To set the hour, press the HOUR button the appropriate number of times or hold the button down until the correct figure is displayed.
3) To set the minutes, press the MIN. button the appropriate number of time, or hold the button down until the correct figure is displayed.
4) When the right time is displayed, press CLOCK to start the clock.
   Result: The correct time is displayed whenever you are not using the microwave oven.



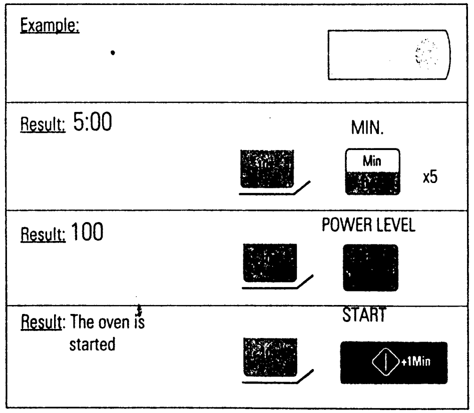
| | | |
|---|---|---|
| Example: 2:30 p. m. (14h30) | CLOCK | |
| Press HOUR three times. | HOUR | x3 |
| Press MIN.<br>until the figure<br>30 is displayed. | MIN | |
| Press CLOCK. | CLOCK | |

## Checking that Your Oven is Operating Correctly

**The following simple procedure enables you to check that your oven is working correctly at all times. If you are in doubt, refer to the table below.**

NOTE: The oven must be plugged into an appropriate wall socket.
The glass plate must be in position in the oven.
If a power level other than the maximum (100%) is used, the water will take longer to boil.

1) Open the oven door by pushing the OPEN DOOR button. Place a glass of water on the glass plate.
   Close the door.
2) Set the time to 4 to 5 minutes by pressing the 1 Min. button.
3) Press the POWER LEVEL button once.
   Result: The oven heats the water for 4 to 5 minutes.
   The water should then be boiling.
   The figure 100(maximum power) is displayed. After 2 seconds, the remaining cooking time will be shown on the display.
4) Press the START button.



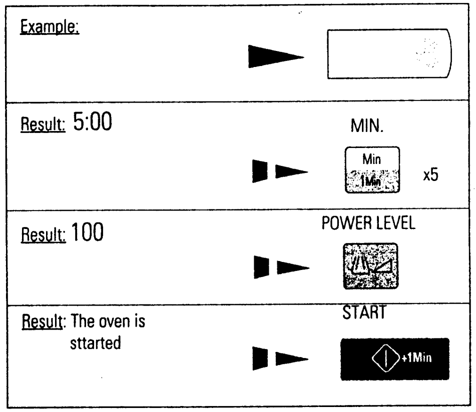
| | | |
|---|---|---|
| Example: | | |
| Result: 5:00 | MIN. | x5 |
| Result: 100 | POWER LEVEL | |
| Result: The oven is<br>started | START | |

## Cooking/Reheating with the Microwave Oven

**The following simple procedure explains how to cook or reheat food. For more information on the actual power level and time to be selected, refer to the tables opposite and the cooking guide later in this booklet.**

**IMPORTANT:** ALWAYS check your cooking settings before leaving the oven unattended.

1) Open the door by pushing the OPEN DOOR button. Place the food in the centre of the glass plate. Close the door.
2) Select the cooking time by pressing the 10 Min., 1 Min. or 10 Sec. buttons as required.
3) Select the appropriate power level by pressing the POWER LEVEL button until the corresponding figure is displayed.
4) Press the START button.
   Result: Cooking starts and the selected time starts counting down.
   At the end, you hear four beeps and the current time is displayed again.



| | | |
|---|---|---|
| Example: | | |
| Result: 5:00 | MIN. | x5 |
| Result: 100 | POWER LEVEL | |
| Result: The oven is<br>sttarted | START | |

## Variable Power Cooking Chart

**The POWER LEVEL enables you to select the amount of microwave or heater energy used and thus the time required to cook, reheat or defrost your food.**

Operation

Press POWER LEVEL GRILL or COMBI button to select the appropriate power level.

| **POWER LEVEL** | **%** | **OUTPUT** | |
|---|---|---|---|
| | | **MWO** | **GRILL** |
| HIGH | 100% | 900W | |
| SAUTE | 90% | 810W | |
| REHEAT | 80% | 720W | |
| MEDIUM HIGH | 70% | 630W | |
| SIMMER | 60% | 540W | |
| MEDIUM | 50% | 450W | |
| MEDIUM LOW | 40% | 360W | |
| DEFROST | 30% | 270W | |
| LOW | 20% | 180W | |
| WARM | 10% | 90W | |
| GRILL | - | - | 1300W |
| COMBI I | 30% | 270W | 1300W |
| COMBI II | 50% | 450W | 1300W |
| COMBI III | 70% | 630W | 130x0W |

## Adjusting the Cooking Time During Cooking

***Like traditional cooking, you may find that depending on the food's characteristics or your tastes, you have to adjust the cooking times slightly.***
**You can:**
- **Check how cooking is progressing at any time simply by opening the door**
- **Add extra minutes simply by pressing + 1M**

### Stopping the Cooking

You can stop cooking at any time so that you can:
- Check the food
- Turn the food over or stir it
- Leave it to stand

| To stop the cooking.... | Press.... |
|---|---|
| Temporarily | OPEN DOOR.OR PRESS THE STOP//CANCEL To resume cooking, close the door and pressSTART. |
| Completely | CANCEL. |

If you want to stop the microwave oven during cooking cycle, press the Stop/Cancel pad once.
Or, if you want to clear all programs during cooking cycle, press Stop//Cancel pad twice.

### Adding Extra Time

If you check your food and find that it needs to be cooked a little longer, do not need to repeat all the settings.

Simply press +Min once for each extra minute you wish to add.

Example: To add three minutes, press +Min three times.

▶ +1Min x3

Whenever you press +1 Min button, cooking time will increase minute by minute.

## Auto Defrosting Food

**This feature allows you to defrost meat, poultry or fish.**
**With the Auto Defrost feature, the oven automatically sets the defrosting time and power levels.**
**Enter the food weight in kilograms. Use the Auto Defrost Guide.**

1) Place the frozen food in the oven and close the door.
2) Press AUTO DEFROST.
   Result: The display indicates 0.0
3) Enter the food weight by holding down the Kg, g buttons. Control the defrost condition by pressing the ▲ or ▼ buttons as required.
4) Press START.
   Result: Defrosting begins and the time counts down. The oven beeps ten times and will stop operating at the half way stage of an auto-weight defrost programme. Turn the food over and press START. When defrosting has finished, the oven beeps four times.

Example: Defrosting 1.2kg of stewing steak in cubes.

AUTO DEFROST

Result: 0.0 ▶ AUTO

Result: 1.2 ▶ Kg x1 g x2

Result: The meat is defrosted. ▶ +1Min

IMPORTANT Allow 20~40 minutes standing time.

### Auto Defrost Guide

MEAT: The programme can be used to deforst beef, pork, beef steaks, pork chops and Minced Meat automatically.

POULTRY: Use the automatic programme to defrost whole chicken and chicken pieces.

FRUIT: The automatic programme for defrosting frozen fruit is especially made for soft fruit like raspberries, strawberries and blackberries. It is also possible to defrost other fruit eg, apple or mango slices and cherries.

FISH: This programme is recommended for defrosting trout, sea bream, plaice, salmon and cod either whole fish or fish fillet.

HINTS: It is of course possible to defrost other quantities and kinds of food manually. To defrost meat, poultry and fish, we recommend that you shield the edge parts with aluminium foil. During the defrosting programme. as soon as you hear the "beep" turn the food over.

## Auto Defrosting Food (continued)

Auto Defrost Guide

| RECIPES | WEIGHT | STANDING TIME | PREPARATION |
|---|---|---|---|
| **FISH**<br>whole fish<br>fish fillets | 0.2 - 2.0kg | 20 - 40 mins | Shield the whole tail of the fish with aluminium foil.<br>Turn over when beep sounds during defrosting. |
| **POULTRY**<br>whole chicken<br>chicken pieces | 0.2 - 2.0kg | 20 - 40 mins | Shield the chicken legs and wings with aluminium foil.<br>Turn over when beep sounds during defrosting. |
| **MEAT**<br>roast beef<br>roast pork<br>beef steak<br>pork chops<br>minced beef | 0.2 - 2.0kg | 20 - 40 mins | Shield the edge parts with aluminium foil.<br>Turn over when beep sounds during defrosting. |
| **FRUIT** | 250g<br>500g | 10 mins<br>10 mins | Spread the fruit, if it is possible, and place them in a glass bowl with a lid. Cover during defrosting.<br>Stir carefully before standing. |

## Instant Cook

**With the instant cook feature, the oven automatically sets cooking time.**
**No need to touch START.**
**The serving size is automatically set at 1, but can be changed by touching instant cook pad.**

1) Place the milk in the oven and close the door.
2) Select the serving size by pressing the DRINKS button as required.
   Result: Cooking starts after about 2 seconds and the time displayed starts counting down. At the end, you hear four beeps.

Example: 600ml Milk

▶

Result: 3:30

▶ ☕ x3

### Instant Cook Guide

BAKED POTATOES: Arrange 2 potatoes on opposite sides of the cooking tray.
Arrange 4 and 6 potatoes in a circle.

In case your microwave oven has a crisp and you use it for PIZZA/OVEN CHIPS, you will have a better result.

## Instant Cook (continued)

Instant Cook Guide

| CODE | RECIPES | SERVING SIZE | STANDING TIME | PREPARATION |
|---|---|---|---|---|
| 1 | DRINKS<br>coffee/milk/water<br>coffee/milk/water<br>water | 150ml<br>300ml<br>600ml | - | Take the coffee, milk, water out of the refrigerator and heat covered. |
| 2 | BAKED POTATOES | 2 x 175 - 225g<br>4 x 175 -225g<br>6 x 175 - 225g | 5 mins<br>5 mins<br>5 mins | Take potatoes which are approximately the same size and weigh them. Wash the potatoes, use a fork to prick the skin in several places. |
| 3 | PIZZA | 300g-350g<br>375g-450g | | Put the pizza on a plate or the crisp plate and place on a glass plate. |
| 4 | BURGER/FISH FINGER | 110g-225g<br>225g-450g | | Place burger directly on the rack and fish finger on the rack with aluminum foil. Turn over when beef sounds during cooking. |
| 5 | OVEN | 250g<br>500g | | Place the oven chips on grid with a backing paper. Turn over when beef sounds during cookig. |
| 6 | RICE/PASTA | | | |
| | rice | 250g | 10 mins | Put the rice into a large glass bowl. Add 600ml cold water and stir well. Cover with lid. Stir before standing and cover during standing. Stir before serving. |
| | pasta | 250g | 5 mins | Put the pasta into a large bowl. Add 1500ml boiling water and stir well. Cook Uncovered. Stir immediately after cooking and cover during standing. |
| | rice | 500g | 5 mins | Put the rice into a large glass bowl. Add 1100ml cold water and stir. Cook with a lid. Stir before standing and cover during standing. Stir before serving. |
| | pasta | 500g | 5 mins | Put the pasta into a large bowl. Add 2000ml boiling water and stir well. Cook uncovered. Stir before standing. Cover during standing and stir before serving. |

---

## Auto Cook

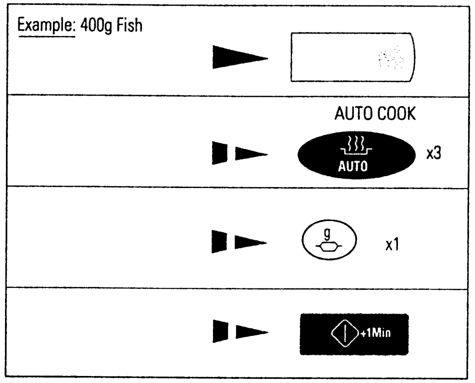
**The Auto cook function has six pre-programmed cooking times. Everything is automatic, neither cooking nor power levels has to be set.**
**The Serving size is automatically set at 1, but can be changed by touching ⚖ pad.**

1) Place the Fish in the oven close the door.

2) Select the code for AUTO COOK button.

3) Select the serving size by pressing the ⚖ button as required and then control the cooking condition by ▲ or ▼ (see Auto Cook Guide)

4) Press START.
The oven will operate automatically in accordance with the Auto cooking programme selected.



### Auto Cook Guide

RECOMMENDATIONS FOR REHEATING

For plated meal: This program is for traditional meals with meat pieces in sauce, cooked vegetables served with a side-dish like mashed potatoes or noodles. Depending on the kind of the meat, the thickness of the slices etc, it is possible that sometimes you will have to push the More-button.

Pie/quiche: In case your microwave oven has a crisp plate and you use it for PIE/QUICHE you will have a better result.

Important: Make sure that all of the components of the meal are piping hot.

RECOMMENDATIONS FOR COOKING

For roast beef, roast chicken and chicken portion, if you brush with oil you will have a better browing.

Roast chicken: In case your microwave oven has a roast spit and you use it for roast chicken you will have a better result.

Fish: The automatic programme for fresh fish is especially made for whole fish or fish fillets of trout, plaice, salmon, sea bream and cod.

Fresh vegetables: The automatic program for fresh vegetables is suitable for peas, carrots, beans, broccoli, cauliflower and mixed vegetables.

Frozen vegetables: We recommend that other different kinds of frozen vegetables.

(Normal programme) Use the normal programme to cook frozen broccoli and cauliflower. There is a MORE and LESS facility for use with the automatic programme.

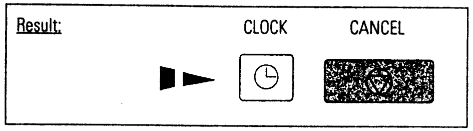
(LESS-button) For cooking frozen peas, sweet corn and mixed vegetables you will need to push the LESS-button.

(MORE-button) You will need to push the MORE-button for carrots and beans. For the best results when

## Child Safety Programme

**Your microwave oven incorporates a special Child Safety programme which enables the oven to be "locked" to prevent children or anyone unfamiliar with the oven from operating it. The oven can be "locked" at anytime.**

1) Press the CLOCK and CANCEL pads together. The oven will be "locked" and a key symbol will appear in the display. To cancel the child lock press CLOCK and CANCEL pads together. The key symbol will disappear.



## Instant Cook (continued)

Instant Cook Guide

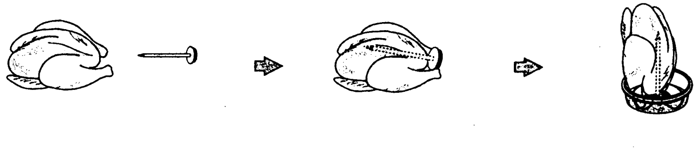
| CODE | RECIPES | SERVING SIZE | STANDING TIME | PREPARATION |
|---|---|---|---|---|
| 1 | PLATED MEAL (Reheating) | 300-400g<br>450g-550g | 2 mins<br>2 mins | Take the plated meal out of the refrigerator and cover it. Make sure that the meal is piping hot right through, if not, push the MORE-button. |
| 2 | PIE/QUICHE | 160g-210g<br>340g-550g | | Put pie/quiche on a plate or the crisp plate |
| 3 | CASSEROLE/STEW (Reheating) | 400g<br>300g | 2 mins<br>2 mins | Cover during heating, Stir before standing and cover during standing. Stir before serving. |
| 4 | SOUP//SAUCE | 200g-250g<br>400g-500g | 2 mins<br>2 mins | Pour soup/sauce into a deep plate or a small bowl (ceramic plate/bowl) cover during heating. Stir before standing and cover during standing. |
| 5 | ROAST BEEF | 1000g<br>1500g<br>2000g | 5 mins<br>5 mins<br>5 mins | Put roast beef on a roast rack in a dish. Turn over when beep sounds during cooking. |
| 6 | ROAST CHICKEN | 700g<br>1000g<br>1500g | 5 mins<br>5 mins<br>5 mins | Put chicken on a roast rack in a dish. Turn over when beep sounds during cooking. |
| | ROAST CHICKEN (SPIT) | 900-1000g<br>1050-1159g | 5 mins<br>5 mins | See the Roast Spit Guide. |
| 7 | CHICKEN PORTION | 400g<br>600g<br>900g | 2 mins<br>2 mins<br>2 mins | Arrange pieces bone-side up on the rack. Turn over when beep sounds during cooking. |
| 8 | FRESH VEGETABLES | 200g<br>add 45ml water<br>400g<br>add 60ml water<br>600g<br>add 60ml water | 2 mins<br>2 mins<br>2 mins | Put the vegetables into a bowl and add 45 or 60ml cold water.<br>Cover during cooking, stir before standing, cover during standing. |
| 9 | FROZEN VEGETABLES | 200g | 2 mins | Put the vegetables into a bowl and add 45ml cold water. Cover during cooking. Stir before standing and cover during standing. |
| | | 300g | 2 mins | Put the vegetables into a bowl and add 45ml cold water. Cover during cooking.<br>Stir before standing, Cover during standing. |
| | | 450g | 2 mins | Put the vegetables into a bowl and add 45ml (3tbsp) cold water (for broccolil and cauliflower add 60ml). Cover during cooking. Stir before standing, cover during standing. |
| 10 | FISH | 200g<br>400g<br>600g | -<br>-<br>- | Arrange the fish in a microwave sultable dish and cover. |

## Roast Spit/Crisp - Function

### What is the roast spit for barbecur - M9GF45/M9GR45

- **The roast spit system is very convenient for preparing barbecue.**
- **If the surface of good gets browning equality, it is not necessary to rotate the food during cooking.**
- **The roast spit can by used for Grill combination cooking.**
- **The maximum food load is 1.2 Kg.**

**How to use the roating spit**



1. Insert the food into the roast spit with barbecue.
2. Mount the food inserted spit on the spit stand.
3. Fix the wings of the chicken to the breast by pricking with the leg fastening pins.
4. Apply oiling on to the food surface for good browing. (Brush with oil)
5. Put the food-inserted spit in the glass bowl and then place them in the center of the cooking tray.
6. After cooking is completed, be sure to use oven gloves when removing the glass bowl along with food.

Note: Before cooking starts, make sure that the heater is located at the back of the oven cavity, not at the top.

### Cooking with the crisp plate - M9GF45/M9GT45

- **The crisp plate will give foods such as pizzas and pies a nice crisp, brown botton surface.**
- **This function is used to crisp precooked pizzas and other dough based foods.**
- **It is also used to try bacon, eggs, sausages, hamburger etc.**

1. Place foods directly on the crisp-plage.
2. Brush the crisp-plate with oil before use. This will give you easy removal of food from the plate and easy cleaning after use.

### Crisp Plate

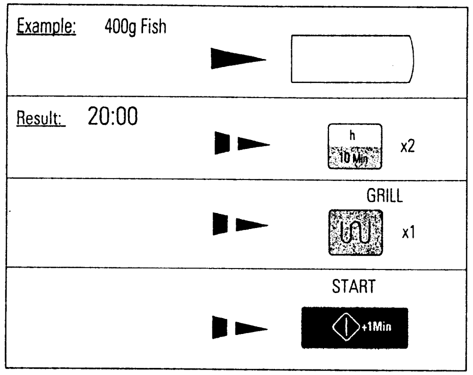
Unlike the ordinary Grill or Microwave cooking when the button surface of foods such as pizza remains wet, the crisp-plate very rapidly reaches high temperature and stants to crisp and brown the bottom of your food.
At the same time the grill element is cooking your food from the top.
It is adviced to preheat the crisp-plate for 2-3 minutes before use.

**Note: Do not place any cookware on the crisp-plate as it very soon becomes hot and may cause damage to the cookware. Do not use crisp-plate without glass tray as support. Be sure to use oven gloves when removing the crisp-plate.**

## Grill Cooking

**This method allows food to be browned evenly without losing any of the juices.**

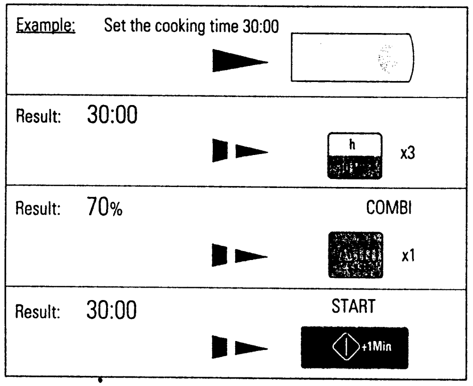
1) Open the door by pushing the DOOR OPEN button.
   Place the food in the center of the glass plate.
   Close the door.
2) Select the GRILL cooking time by pressing the 10 Min, 1 Min, or 10 sec button as required.
3) Press the GRILL pad once.
4) Press the START pad.
   Result: Cooking starts and selected time starts counting down.
   - Grill cooking does not use microwave energy. For versatile grill cooking you may use metal rack prepared for grill cooking, but consult your cookbook for its correct use.
   - You Can't set the time more than 60 minutes



## Combi Cooking

**COMBI (MICROWAVE + GRILL) cooking with both microwave energy and radiant heat utilized.**

1) Place the food in the oven and close the door.
2) Set the cooking time by pressing the 10 Min, 1 Min, 1 Min or 10 Sec button as required.
   Touch the COMBI pad once.
3) If you want to change COMBI power level, touch COMBI pad again, then the figure (50% or 30%) is displayed.
4) Touch the START pad.
   - You Can't set the time more than 50 minutes.

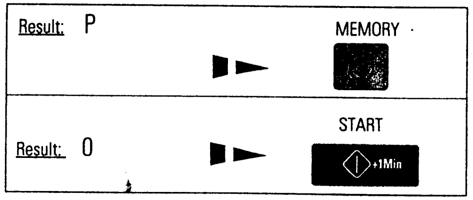


## Memory Cooking

**The cooking times and power levels for foods that are cooked frequently can be programmed and stored in the oven's memory.**

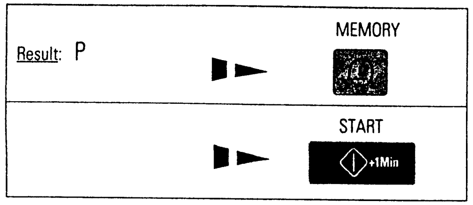
**MEMORY ENTRY**

1) Touch the MEMORY pad.
2) Set your cooking programme following the instructions book
3) Touch the Start Pad your favourite recipe is now set and entered in the Memory.



**MEMORY START**

1) Touch the MEMORY pad.
2) Touch the START pad.



## Cookware Guide

**To cook food in the microwave oven, the microwaves must be able to penetrate the food, without being reflected or absorbed by the dish used.**

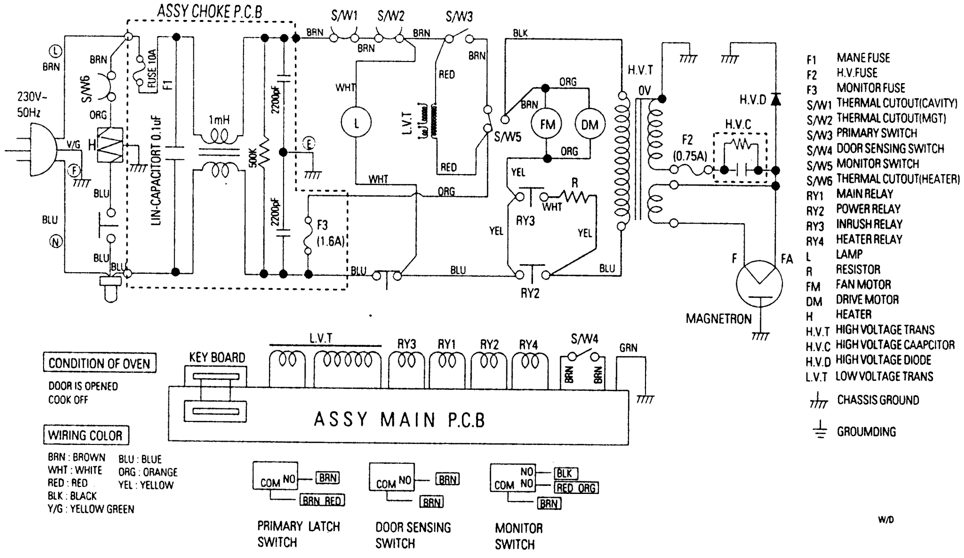
**Care must therefore be taken when choosing the cookware. If the cookware is marked microwave-safe, you do not need to worry.**

**The following table lists the various types of cookware and indicates whether and how they should be used in a microwave oven.**

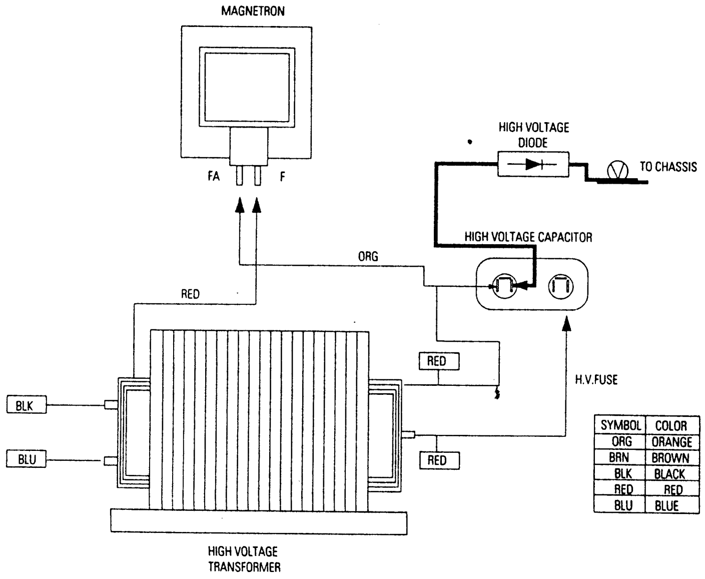
| COOKWARE | MICROWAVE SAFE | COMMENTS |
|---|---|---|
| Aluminium foil | X | Can be used in small quantities to protect areas against overcooking. Arcing can occur if the foil is too close to the oven wall or if too much foil is used. |
| Browning plate | √ | Do not preheat for more than 8 minutes. |
| China and earthenware | √ | Porcelain, pottery, glazed earthenware and bone china are usually suitable, unless decorated with a metal trim. |
| Disposable polyester dishes | √ | Some frozen foods are packaged in these dishes. |
| Fast-food packaging<br>* Polystyrene cups and containers | √ | Can be used to warm food. Overheating may cause the polystyrene to melt. |
| * Paper bags or newspaper | X | May catch fire. |
| * Recycled paper or metal trims | X | May cause arcing. |
| Glassware<br>* Oven-to-table ware | √ | Can be use, unless decorated with a metal trim. |
| * Fine glassware | √ | Can be used to warm food or liquids. Delicate glass may break or crack if heated suddenly. |
| * Glass jars | √ | Must remove lid. Suitable for warming only. |
| Metak<br>* Dishes<br>* Freezer bag twist ties | X<br>X | May cause arcing or fire. |
| Paper<br>* Plates, cups, napkins and kitchen paper | √ | For short cooking times and warming. Also to absorb excess moisture. |
| * Recycled paper | X | May cause arcing. |
| Plastic<br>* Containers | √ | Particularly if heat-resistant thermoplastic. Some othe plastics may warp or discolour at high temperatures. Do not use Melamine plastic. |
| * Cling film | √ | Can be used to retain moisture. Should not touch the food. Take care when removing the film as hot steam will escape. |
| * Freezer bags | X √ | Only if boilable or oven-proof.<br>Should not be airtight. Prick with a fork if necessary. |
| Wax or greaseproof paper | √ | Can be used to retain moisture and prevent spattering. |

# 7. Wiring Diagram

## Wiring Diagram


ASSY CHOKE P.C.B
S/W1
S/W2
S/W3
S/W5
S/W6
230V~
50Hz
BRN
ORG
BLU
BLK
RED
WHT
YEL
V/G
H
FUSE 10A
F1
LIN-CAPACITORT 0.1uF
1mH
500K
2200pF
2200pF
F3
(1.6A)
L
L.V.T
FM
DM
R
RY3
RY2
H.V.T
0V
F2
(0.75A)
H.V.C
H.V.D
F
FA
MAGNETRON
F1 MANE FUSE
F2 H.V.FUSE
F3 MONITOR FUSE
S/W1 THERMAL CUTOUT(CAVITY)
S/W2 THERMAL CUTOUT(MGT)
S/W3 PRIMARY SWITCH
S/W4 DOOR SENSING SWITCH
S/W5 MONITOR SWITCH
S/W6 THERMAL CUTOUT(HEATER)
RY1 MAIN RELAY
RY2 POWER RELAY
RY3 INRUSH RELAY
RY4 HEATER RELAY
L LAMP
R RESISTOR
FM FAN MOTOR
DM DRIVE MOTOR
H HEATER
H.V.T HIGH VOLTAGE TRANS
H.V.C HIGH VOLTAGE CAAPCITOR
H.V.D HIGH VOLTAGE DIODE
L.V.T LOW VOLTAGE TRANS
CHASSIS GROUND
GROUMDING
CONDITION OF OVEN
DOOR IS OPENED
COOK OFF
WIRING COLOR
BRN : BROWN
WHT : WHITE
RED : RED
BLK : BLACK
Y/G : YELLOW GREEN
BLU : BLUE
ORG : ORANGE
YEL : YELLOW
KEY BOARD
L.V.T
RY3
RY1
RY2
RY4
S/W4
GRN
ASSY MAIN P.C.B
COM
NO
BRN
BRN RED
PRIMARY LATCH SWITCH
DOOR SENSING SWITCH
BLK
RED ORG
MONITOR SWITCH
W/D

## High Voltage Circuit


MAGNETRON
FA
F
HIGH VOLTAGE DIODE
TO CHASSIS
HIGH VOLTAGE CAPACITOR
ORG
RED
RED
RED
BLK
BLU
H.V.FUSE
HIGH VOLTAGE TRANSFORMER
SYMBOL COLOR
ORG ORANGE
BRN BROWN
BLK BLACK
RED RED
BLU BLUE

W/D-1

# 8. Cautions Observed when Servicing

Unlike many other appliances, the microwave oven is high-voltage, high current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

**PRECAUTION**

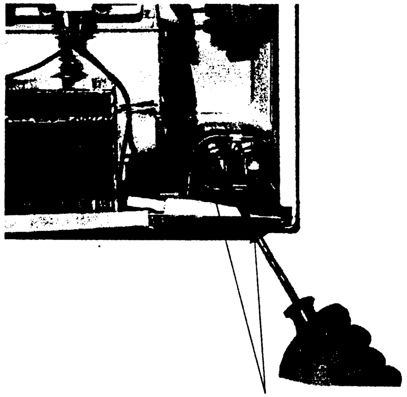
Servicemen should remove their watches whenever working close to or replacing the magnetron.

**8-1. Check the ground.**

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to make sure that the oven should be grounded prior to repair.

**8-2. Warning about the electric charge in the high voltage capacitor**

As an electric charge in the high voltage capacitor remains for about 30 seconds after operation stops, short the current between the oven chassis and the negative terminal of the high voltage capacitor, by using a screwdriver before replacing or checking parts.



☞ : Touch chassis side first then short to the high voltage capacitor terminal by using a screwdriver or jumper wire.

**8-3. When parts must be replaced, remove the power plug from the outlet**

**8-4. When the 1.6 Amp fuse is blown out by the operation of the interlock Monitor switch:**

(A) Replace the primary, door sensing and interlock monitor switches. This is mandatory. Refer to page 22 for the necessary adjustments of these switches.

(B) When replacing the fuse, confirm that it has the appropriate rating for this model.

**8-5. Avoid inserting any foreign materials, etc. through any hole in the unit during operation.**

Never insert any foreign materials or any other metal object through the lamp hole on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

**8-6. Confirm after repair:**

(A) After repair or replacement of parts, make sure that screws of the oven are neither loose nor missing; to prevent the microwave leakage.

(B) Make sure that all electrical connections are tight before inserting the plug in to the wall outlet.

(C) Check for radiation leakage. (Refer to the procedure for measuring energy leakage in page 23.)

**PRECAUTION**

There exists HIGH VOLTAGE ELECTRICITY with high current capabilities in the circuits of the HIGH VOLTAGE TRANSFORMER secondary and filament terminals. It is extremely dangerous to work on or near these circuits with the oven energized.
DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

**PRECAUTION**

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

# 9. Circuit Descriptions

Refer to the wiring diagram on page 18.

**1. When food is placed inside oven and door is closed**

(A) Low voltage transformer supplies necessary voltage to the touch control circuit when power cord is plugged in.

(B) The primary interlock switch is closed.

(C) The interlock monitor switch is opened. This interlock monitor switch acts to blow 10A fuse and stop magnetron oscillation when the door is opened during operation under an abnormal condition. (i.e. the contacts of door sensing switch do not open and the contacts of secondary interlock switch do not close the circuit to stop oscillation)

(D) The door key is caught by the door hook, the door sensing switch is closed to send the door-close signal to the touch control circuit.

**2. When cooking cycle, power and time are set by touching the function pads**

(A) The time set appears in the display window.

(B) The touch control circuit stores the cooking data set.

**3. When the START pad is touched**

The main relay and the power control relay are controlled by the touch control circuit.

(A) An oven lamp lights the inside of the oven by operation of the main relay in the Touch Control Circuit.

(B) Fan motor rotates and cools the magnetron by blowing the air coming from the intake on the back panel over the magnetron fins. After cooling the fins, this air is directed into the oven to blow out the vapor.

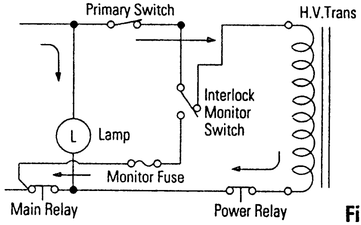


Fig. 1

(C) 230V~50Hz AC is applied to the high voltage transformer through the contacts of primary windings as shown by the solid line just after the power control relay turns ON. (Fig. 1)

(D) 3.4V AC is generated from the filament winding of the high voltage transformer. This 3.4V is applied to the magnetron to heat the magnetron filament through two noise preventing choke coils.

(E) High voltage of 2,230 volts AC is generated from the high voltage transformer secondary and this secondary voltage is increased by the action of the diode and the charging of the high voltage capacitor. This resultant D.C. voltage is then applied to the anode of the magnetron. As shown in the Fig. 2, the first half cycle of the high voltage produced in the secondary high voltage transformer charges the high voltage capacitor.The dotted lines indicate the current flow. During operation of the second half cycle, the voltage produced by the transformer secondary and the charge of the high voltage capacitor are combined and applied to the magnetron as shown in the solid line so that magnetron starts to oscillate. The interference wave generated from the magnetron is prevented by the 1.6uH choke coils, 500pF filter capacitors and the magnetron's shielded case so that TV and radio signals are not interfered with.

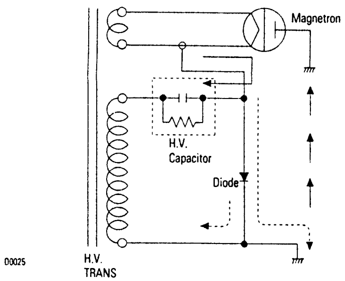


Fig. 2

(F) The power control relay is turned on intermittently by the touch control circuit, when the oven is set at any power except for full power. The touch control circuit controls the ON/OFF time of the power control relay in order to vary the output power of the microwave oven from Low to "Full" power. One complete ON/OFF cycle of the power control is 30 seconds.

(G) The cooking time shown on the display start to count down.

**4. When the door is opened during cooking**

(A) The primary interlock switch is opened to cut off the primary voltage of the high voltage transformer to stop microwave oscillation.

(B) The door sensing switch is opened to give the door open information to touch control circuit. The main relay stays on, the power control relay turns off and the display stops counting down.

(C) The fan motor and turn-table motor are stopped by operation of the primary or secondary interlock switch. But the oven lamp lights the inside of the oven again until the door is closed.

(D) Upon opening the door, the contacts of primary interlock switch open and the contacts of interlock monitor switch close the short circuit.

(E) If the contacts of primary interlock switch do not function properly, the monitor fuse blows out due to the large current surge caused by the monitor switch activation, and this in turn stops magnetron oscillation. (Fig. 3)

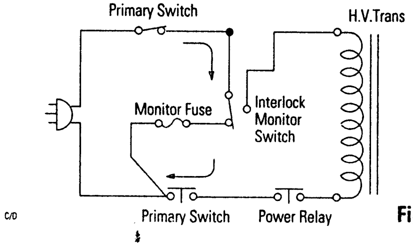


Fig. 3

**5. When the CANCEL pad is touched during cooking**

(A) Once touching of the CANCEL pad stops the time cooking. Twice touching of the pad cancels all programs stored in the touch control circuit. The time of day reappears on the display window.

(B) The oven lamp and cooking indicators turn off.

(C) The fan motor stops.

(D) The power control relay turns off to cut primary voltage to high voltage transformer so that the magnetron stops oscillation.

# 10. Component Test Procedure

**PRECAUTION**

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

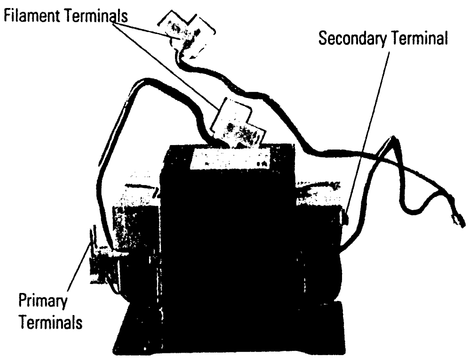
**10-1. High Voltage Transformer**

1) Remove connectors from the transformer terminals and check continuity.

2) Normal resistance readings should be as follows:

| | |
|---|---|
| Secondary | Approx. 94Ω |
| Filament | Approx. 0Ω |
| Primary | Approx. 1.6Ω |

(Room temperature = 20°C)



**10-2. Low Voltage Transformer**

The low voltage transformer is located on the control circuit board.

1) Remove the low voltage Transformer from the PCB Ass'y and check continuity.

2) Normal resistor reading should be as follows.

| Terminals | Resistance |
|---|---|
| 1~2(Input) | 1000Ω |
| 3~4(Output 2.9V) | 3.947Ω |
| 5~6(Output13V) | 2.117Ω |

**10-3. Magnetron**

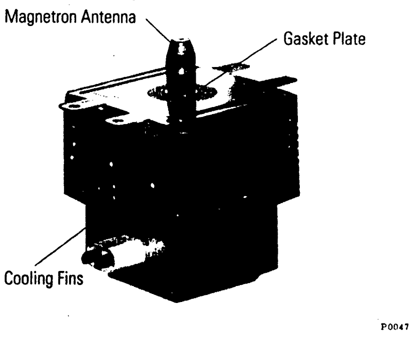
Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron;

1) Isolate the magnetron from the circuit by disconnecting its leads.

2) A continuity check across the magnetron filament terminals should indicate one ohm or less.

3) A continuity check between each filament terminal and magnetron case should read open.

**10-4. High Voltage Capacitor**



1) Check continuity of the capacitor with meter set at the highest ohm scale.

2) Once the capacitor is charged, a normal capacitor shows continuity for a short time, and then indicates 9MΩ.

3) A shorted capacitor will show continuous continuity.

4) An open capacitor will show constant 9MΩ.

5) Resistance between each terminal and chassis should read infinite.

**10-5. High Voltage Diode**

1) Isolate the diode from the circuit by disconnecting its leads.

2) With the ohm-meter set at the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and read the resistance. A meter with 6V, 9V or higher voltage batteries should be used to check the front-to back resistance of the diode, otherwise an infinite resistance may be read in both directions. The resistance of a normal diode will be infinite in one direction and several hundred KΩ in the other direction.

**10-6. Main Relay and Power Control Relay**

The relays are located on the PCB Ass'y.

1) Isolate the relays from the main circuit by disconnecting the leads.

2) operate the microwave oven with a water load in the oven and the power level set to high.

3) Check continuity between terminals of the relays after the start pad is pressed.

# 11. Measurements & Adjustments

**Precaution**

For continued protection against radiation hazard, replace parts in accordance with the wiring diagram and be sure to use the correct part number for the following switches.: Primary and secondary interlock switches and the interlock monitor switch all together. Then follow the adjustment procedures below. After repair and adjustment, be sure to check the continuity of all interlock switches and the interlock monitor switch.

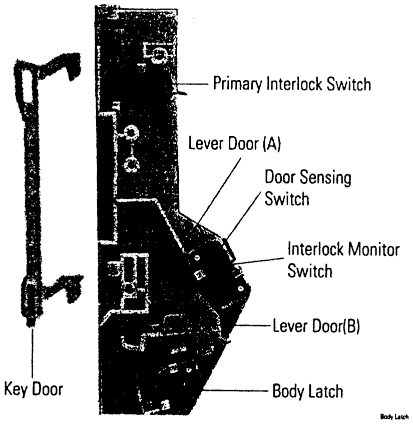
## 11-1. Adjustment of Primary Switch, Door Sensing Switch and Monitor Switch

1) When mounting Primary switch and interlock Monitor switch to Latch Body, consult the figure below.

NOTE: No specific adjustment during installation of Primary switch and Monitor switch to the latch body is necessary.

2) When mounting the Latch Body to the oven assembly, adjust to the Latch Body by moving it so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the Latch Body to the oven assembly.
3) Reconnect to Monitor switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.
Please confirm that the gap between the switch housing and the switch actuator is no more than 0.5mm when door is closed.

| | Door Open | Door Closed |
|---|---|---|
| Primary switch | ∞ | 0 |
| Monitor switch (COM-NC) | 0 | ∞ |
| Monitor switch (COM-NO) | ∞ | 0 |
| Door Sensing S/W | ∞ | 0 |



## 11-2. Output Power of Magnetron

The output power of the magnetron can be simply measured by performing a water temperature rise test.

**Equipment needed for the test:**

* Two 1-liter cylindrical borosilicate glass vessel (Outside diameter of 190mm)

* One glass thermometer with mercury column

NOTE: Check line voltage under load. Low voltage will lower the magnetron output. Make all temperature and time tests with accurate equipment.

(A) Fill the one liter glass vessel with one liter of water.
(B) Stir water in glass vessel with thermometer and record glass vessel's temperature as T1. (10±1°C)
(C) After moving the water into another glass vessel, place it on the center of the cooking tray. Set the oven to high power and operate for 49 seconds exactly. (2 seconds included as a holding time of magnetron oscillation)
(D) When heating is finished, stir the water again with the thermometer and measure the temperature rise as T2.
(E) Subtract R1 from T2. This will give you the water temperature rise. (ΔT)
(F) The output power is obtained by the following formula;

$$\text{Output Power} = \frac{4.187 \times 1000 \times \Delta T}{47}$$

49 : Heating Time (sec)
4.187 : Coefficient for Water
1000 : Water (cc)
ΔT : Temperature Rise (T2-T1)

*** Output (W) = 100 x ΔT**

(F) Normal temperature rise for this model is 9°C to 11°C at 'HIGH'.

NOTE 1: Variations or errors in the test procedure will cause a variance in the temperature rise. Additional power test should be made if temperature rise is marginal.

NOTE 2: Output power in watts is computed by multiplying the temperature rise (step E) by a power factor of 91 in case of centigrade temperature.

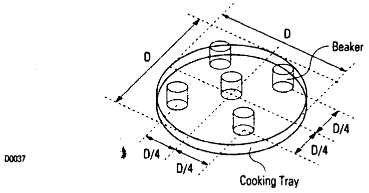
## 11-3. Microwave Heat Distribution - Heat Evenness

The microwave heat distribution can be checked by indirectly measuring the water temperature rises at certain positions in the oven as directed below.

(1) Prepare five beakers made of 'Pyrex', having 100 milliliters capacity each.
(B) Measure exactly 100milliliters off water load with a measuring cylinder and pour it into each beaker.
(C) Measure the temperature of each water load. (Readings shall be taken to the first place of decimals.)
(D) Put each beaker in place on the cooking tray as illustrated in Figure below and start heating.
(E) After heating for 2 minutes, measure the temperatures of water in each beaker.
(F) Microwave heat distribution rate can be obtained by the following formula.

$$\text{Heat Distribution} = \frac{\text{Minimum Temperature Rise}}{\text{Maximum Temperature Rise}} \times 100(\%)$$

The result should exceed 65%.



**CAUTION**
**MICROWAVE RADIATION**

PERSONNEL SHOULD NOT BECOME EXPOSED TO MICROWAVE RADIATION FROM MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

# 12. Leakage Measuring Procedure

### 12-1. Equipment

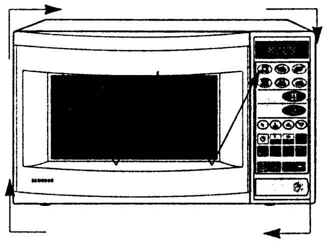
* Microwave Energy Survey Meter

* 600cc glass beaker

* Mercurial or digital thermometer 100°C or 212°F

### 12-2. Procedure for Measurement of Microwave Energy Leakage

1) Pour 275±15cc of 20±5°C (68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
2) Start to operate the oven and measure the leakage by using a microwave energy survey meter.
3) Set survey meter with dual ranges to 2,450MHz.
4) When measuring the leakage, always use the 2 inch spacer cone with the probe. Hold the probe perpendicular to the cabinet door. Place the spacer cone of the probe on the door and/or cabinet door seam and move along the seam, the door viewing window and the exhaust openings moving the probe in clockwise direction at a rate of 1 inch/sec. If the leakage testing of the cabinet door seam is taken near a corner of the door, keep the probe perpendicular to the areas making sure that the probe end at the base of the cone does not get closer than 2 inches to any metal. If it gets closer than 2 inches, erroneous readings may result.
5) Measured leakage must be less than 5mW/cm², after repair or adjustment.

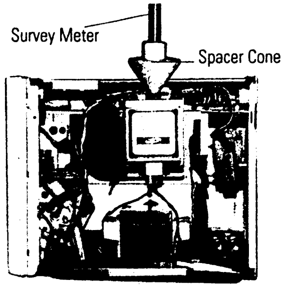


### 12-3. Check for Microwave Energy Leakage with Outer Panel Removed.

1) Remove the outer panel.
2) Pour 275±15cc of 20±5°C(68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
3) Start to operate the oven at the highest power level.
4) Set survey meter with dual ranges to 2,450MHz.
5) By using the survey meter and spacer cone as described above, measure around the opening area of magnetron, the surface of the air guide and the surface of the wave guide as shown in the following photo but avoid the high voltage components. The meter should read less than 5mW/cm².

### 12-4. Note on Measurement

1) Do not exceed the limited scale.



**WARNING**

AVOID THE HIGH VOLTAGE COMPONENTS.

2) The test probe must be held on the grip of the handle, otherwise a false reading may result when the operator's hand is between the handle and the probe.
3) When high leakage is suspected, do not move the probe horizontally along the oven surface; this may cause damage to the probe.
4) Follow the recommendation of the manufacturer of the microwave energy survey meter.

### 12-5. Record keeping and notification after measurement

1) After adjustment and repair of a radiation preventing device, make a repair record for the measured values, and keep the data.
2) If the radiation leakage is more than 5mW/cm² after determining that all parts are in good condition, functioning properly and the identical parts are replaced as listed in this manual, notify that fact to;
**CENTRAL SERVICE CENTER**

### 12-6. At least once a year have the Microwave Energy Survey Meter checked for accuracy by its manufacturer.

# 13. Troubleshooting

## PRECAUTION

1. *CHECK GROUNDING BEFORE CHECKING FOR TROUBLE.*
2. BE CAREFUL OF THE HIGH VOLTAGE CIRCUIT.
3. DISCHARGE THE HIGH VOLTAGE CAPACITOR.
4. WHEN CHECKING THE CONTINUITY OF THE SWITCHES OR TRANSFORMER, DISCONNECT ONE LEAD WIRE FROM THESE PARTS AND THEN CHECK CONTINUITY WITHOUT THE POWER SOURCE ON. TO DO OTHERWISE MAY RESULT IN A FALSE READING OR A DAMAGE TO YOUR METER.
5. DO NOT TOUCH ANY PART OF THE CIRCUIT OR THE TOUCH CONTROL CIRCUIT BOARD, SINCE STATIC ELECTRIC DISCHARGE MAY DAMAGE THIS CONTROL PANEL. ALWAYS TOUCH GROUND WHILE WORKING ON THIS TO DISCHARGE ANY STATIC CHARGE BUILT UP IN YOUR BODY.

First of all operate the microwave oven by observing the correct operating procedures by time cooking in order to find the exact cause of any trouble.

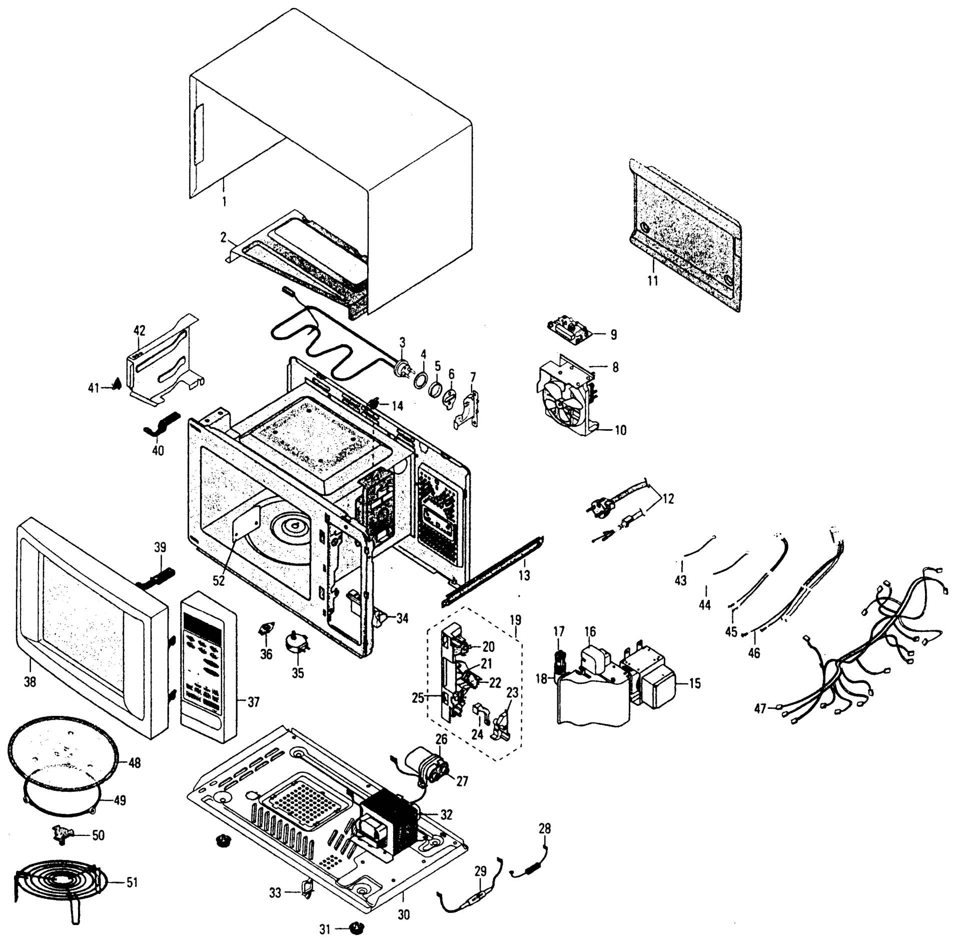
### 13-1. Problems not Related to Defects of the Oven

| | SYMPTOM | CAUSE | CORRECTIONS |
|---|---|---|---|
| 1 | Oven is dead.<br>Fuse is OK.<br>No display and no operation at all. | 1. Open or loose lead wire harness<br>2. Open thermal cutout(Magnetron)<br>3. Open low voltage transformer<br>4. Defective Ass'y PCB | Check fan motor when thermal cutout is defective.<br>Check Ass'y PCB when LVT is defective. |
| 2 | No display and no operation at all.<br>Fuse is blown. | 1. Shorted lead wire harness<br>2. Defective primary latch switch(NOTE 1)<br>3. Defective monitor switch (NOTE1)<br>4. Shorted HVCapacitor<br>5. Shorted HVTransformer (NOTE2) | Check adjustment of primary, interlock monitor, door sensing switch. |
| | | NOTE 1: All of these switches must be replaced at the same time.<br>(refer to adjustment instructions)<br>Check continuity of power relay contacts and if it has continuity, replace power relay also.<br>NOTE 2: When HVTransformer is replaced, check diode and magnetron also. | |
| 3 | Oven does not accept key input(Program) | 1. Key input is not in-Sequence<br>2. Open or loose connection of membrane key pad to Ass'y PCB<br>3. Shorted or open membrane panel<br>4. Defective Ass'y PCB | Refer to operation procedure.<br>Replace PCB main. |
| 4 | Timer starts countdown but no microwave oscillation.<br>(No heat while oven lamp and fan motor turn on.) | 1. Off-alignment of latch switches<br>2. Open or loose connection of high voltage circuit especially magnetron filament circuit<br>NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to lower output and/or intermittent oscillation.<br>3. Defective high voltage components<br>H.V.Transformer<br>H.V.Capacitor<br>H.V.Diode, H.V.Fuse<br>Magnetron<br>4. Open or loose wiring of power relay<br>5. Defective primary latch switch<br>6. Defective power relay or Ass'y PCB | Adjust door and latch switches.<br>Check high voltage component according to component test procedure and replace if it is defective.<br>Replace PCB main. |

# Trobleshooting

| | SYMPTOM | CAUSE | CORRECTIONS |
|---|---|---|---|
| 5 | Oven lamp and fan motor turn on | 1. Misadjustment or loose wiring of primary latch switch<br>2. Defective primary latch switch | Adjust door and latch switches. |
| 6 | Oven can program but timer does not start. | 1. Open or loose wiring of secondary interlock switch<br>2. Off-alignment of primary interlock<br>3. Defective secondary interlock S/W | Adjust door and interlock switches. |
| 7 | Microwave output is low.<br>Oven takes longer time to cook food. | 1. Decrease in power source voltage.<br>2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation))<br>3. Aging change of magnetron | Consult electrician. |
| 8 | Fan motor turns on when plugged in | Loose wiring of door sensing switch | Check wire of door sensing switch. |
| 9 | Oven does not operate and return to the plugged in mode. | Defective Ass'y PCB | Replace PCB main. |
| 10 | Loud buzzing noise can be heard. | 1. Loose fan and fan motor<br>2. Loose screws on H.V.Transformer<br>3. Shorted H.V.Diode | Tighten screws of fan motor.<br>Tighten screws of H.V.Transformer.<br>Replace H.V.Diode. |
| 11 | Turntable motor does not rotate. | 1. Open or loose wiring of turntable motor.<br>2. Defective turntable motor. | Replace turntable motor. |
| 12 | Oven stops operation during cooking | 1. Open or loose wiring of primary interlock switch<br>2. Operation of thermal cutout(Magnetron) | Adjust door and latch switches. |
| 13 | Sparks | 1. Metallic ware or cooking dishes touching on the oven wall.<br>2. Ceramic ware trimmed with gold or silver powder also causes sparks. | Educate your customer.<br>Do not use any type of cookware with metallic trimming. |
| 14 | Uneven cooking | Uneven intensity of microwave due to its characteristics. | Wrap thinner parts of the food with aluminum foil.<br>Use plastic wrap or cover with a lid.<br>Stir once or twice while cooking foods such as soup, cocoa, or milk. |
| 15 | Clock noise from the turntable motor when it starts to operate. | The noise may result from the motor. | Replace turntable motor. |

## Exploded View



## Parts List - Main Part

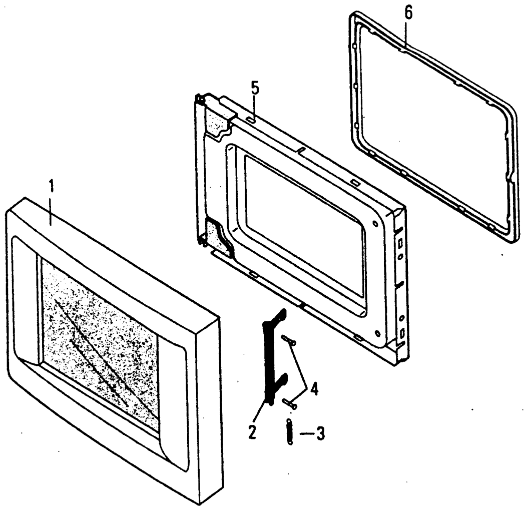
| Ref. No. | Parts No. | Description/Specification | Q'ty | Remarks |
|---|---|---|---|---|
| 1 | 72061-0016-01 | PANEL-OUTER;C/STEEL T0.6 W380.5 L1134 SC-WH-01-B | 1 | |
| 2 | 73012-0256-00 | BRACKET-UPPER;ALCOAT T0.6 W248 L422 M9GF45 | 1 | |
| 3 | 76402-0011-00 | HEATER-SHEATHED;D7 230V 1300W 41.5OHM M9GF45 | 1 | ● ▲ |
| 4 | 73404-0014-00 | GASKET-HEATER;BRASS T1.5 OD30.5 D22.5 | 1 | ● |
| 5 | 71434-0002-00 | FLANGE-RING;C3604BD ID22.1 OD26 L4.7 M9GF45 | 1 | ● |
| 6 | 73014-0275-00 | BRACKET-EARTH;BSS2-A T1.0 W28 L38 M9GF45 | 1 | ● |
| 7 | 73013-0255-00 | BRACKET-HEATER;BSS2-A T1.0 W55 L55.5 M9GF45 | 1 | ● |
| 8 | 76659-200-518 | SUPPORT-P.C.B;DASS-T9N | 2 | |
| 9 | 79179-0046-00 | ASSY NOISE FILTER;250V50HZ GRILL MODEL SS-599B | 1 | |
| 10 | 76822-0054-00 | MOTOR-FAN;AMM92-002AUEC 230V50HZ MIN2550RPM | 1 | |
| 11 | 73312-0162-00 | COVER-BACK;SECC T0.5 W254.5 L410 M9245GD | 1 | |
| 12 | 79243-0080-00 | ASSY POWER CORD;KKP-489D/B232 1.5MM 250V/6 | 1 | |
| 13 | 73073-0034-00 | SUPPORTER-MGT;SECC T0.6 W33.2 L317 MW5630T | 1 | |
| 14 | A3024-0028 | SW-THERMO;NT-101NA(5XH)P 125V15A H 115/93 23.8MM | 1 | |
| 15 | 77059-00348-00 | MAGNETRON;OM75PH(31)ESS | 1 | ▲ |
| 16 | 73312-0161-00 | COVER-AIR;NYLON#66 105G M9GF45 WHT | 1 | |
| 17 | B3046-0003 | SOCKET-LAMP;250V2A 22.230 E14 BJB | 1 | |
| 18 | B4158-0023 | LAMP;T25 230V 25W E14 PHILIPS | 1 | |
| 19 | 79292-0053-01 | ASSY BODY LATCH;M8145G NEW LATCH | 1 | |
| 20 | 73579-203-207 | SW-MICRO;VP533A-OF P,S(T85) | 1 | |
| 21 | 73579-203-278 | SW-MICRO;VP-531A-OF(T85) | 1 | |
| 22 | 73579-203-207 | SW-MICRO;VP533A-OF P,S(T85) | 1 | |
| 23 | 71533-0012-00 | LEVER-SWITCH(B);POM 12G NTR MX245 | 1 | |
| 24 | 71533-0011-00 | LEVER-SWITCH(A);POM 10G NTR MX245 | 1 | |
| 25 | 72681-0004-001 | LATCH-BODY;POM 50G M8135G NEW LATCH | 1 | |
| 26 | 73013-0194-00 | BRACKET-H.V.C;SECC T0.8 W31 L125.8 | 1 | |
| 27 | A1110-0002 | C-OIL;CH-2101054B7N1054 2100VAC 3P | 1 | |
| 28 | 79164-0156-00 | ASSY-H.V.D;V2M6 PI9 0.05MT | 1 | |
| 29 | 79163-0252-01 | ASSY-H.V.FUSE;THV060T-0750-H 5KV0.75A RED | 1 | |
| 30 | 72201-0037-001 | BASE-PLATE;SGCC1-8 T0.8 W324.8 L515 | 1 | |
| 31 | 73004-0007-00 | FOOT;PP(A353) BLK MW5630T | 2 | |
| 32 | 77202-0080-01 | TRANS-H.V;Y9245NTC M9245/MB245 230V 50HZ AC2230V | 1 | ▲ |
| 33 | A0078-0016 | WIRE-SADDLE;DAWS-2NB NYLON66 NTR | 2 | |
| 34 | 71533-0015-00 | LEVER-DOOR;POM(F20-01) NTR MW5630T | 1 | |
| 35 | 76823-0048-00 | MOTOR-SYNCHRONOUS;M2LJ24ZS52 220/240V50/60HZ M6235 | 1 | |
| 36 | A3024-0009 | SW-THERMO;NT-101NA(5XH)P 125V15A H 100/60 30MM | 1 | |
| 37 | | ASSY CONTROL-BOX;230V50HZ M9G45 P/WHT | 1 | ● ▲ |
| 38 | | ASSY DOOR;M9GF45 | 1 | ● ▲ |
| 39 | 73094-0035-00 | HINGE-LOWER;SCP1 T3.0 W24.7 L91.2 BLK COAT MB245 | 1 | |
| 40 | 73094-0036-00 | HINGE-UPPER;SCP1 T3.0 W26 L76 BLK COAT MB245 | 1 | |
| 41 | A3024-0023 | SW-THERMO;NT-101NA(5XV)P 125V15A V 120/110 23.8MM | 1 | |
| 42 | 73352-0087-001 | GUIDE-AIR;ALCOAT T0.6 W240 L242.5 M9GF45 | 1 | |
| 43 | 79224-0019-02 | ASSY WIRE LEAD-C;L130 BLK N/FILTER GND | 1 | |
| 44 | 79204-0381-00 | ASSY WIRE HARNESS-E;230V50HZ M9G45 CTW | 1 | ● |
| 45 | 79203-0379-00 | ASSY WIRE HARNESS-H;230V50HZ M9G45 CTW | 1 | ● |
| 46 | 79203-0380-00 | ASSY WIRE HARNESS-D;230V50HZ M9G45 CTW | 1 | ● |
| 47 | 79202-0378-001 | ASSY WIRE HARNESS-A;230V50HZ M9G45 CTW | 1 | ● |
| 48 | 73602-0007-00 | TRAY-COOKING;GLASS T6.0 PI318 1050G | 1 | |
| 49 | 79362-0281-00 | ASSY-GUIDE ROLLER;MW5630T | 1 | |
| 50 | 71444-0016-001 | COUPLER;PPS(ESS840) 5G BRN | 1 | |
| 51 | 73642-0015-00 | RACK-WIRE;MSWR10 D264 SNC2 M9GF45 | 1 | |
| 52 | 73314-0097-00 | COVER-CEILING;MICA SHEET T0.5 W59 L122 WHT | 1 | |

▲ : Warning

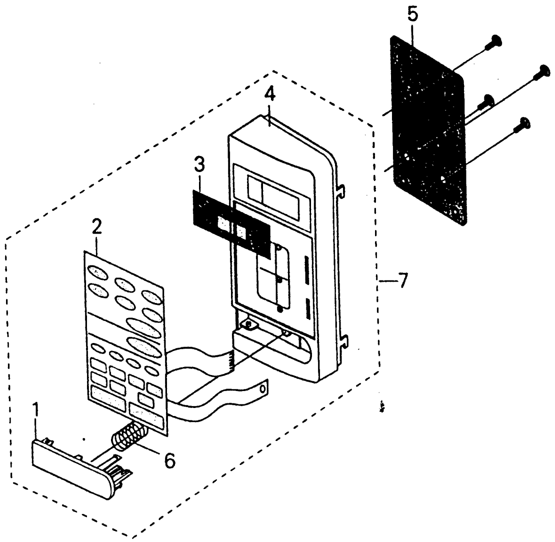
● : Option Parts

▲ : Electrostatically Sensitive Devices

## Exploded View - Door Part



## Exploded View - Control Part



## Parts List - Door Parts

| Ref. No | Parts No. | Description / Specification | Q'ty | Remarks |
|---|---|---|---|---|
| 1 | 79321-0214-01 | ASSY DOOR-A;M9GF45 | 1 | ● ▲ |
| 2 | 74042-0065-001 | DOOR-KEY;POM(TC3005) BLK 13G W3 | 1 | |
| 3 | 72724-0036-00 | SPRING-KEY;ES HSW3 PI0.7 D7.0/L40 BULING | 1 | |
| 4 | 70544-0010-00 | PIN-HINGE;PI4 L17 MSWR10 M301TBC | 2 | |
| 5 | 79341-0026-02 | ASSY DOOR-E;M9GF45 SELANT | 1 | |
| 6 | 74041-0040-00 | DOOR-C;PP(A353) BLK MW5630T | 1 | |

## Parts List - Control Parts

| Ref. No | Parts No. | Description / Specification | Q'ty | Remarks |
|---|---|---|---|---|
| 1 | 74082-0082-00 | BUTTON-PUSH;ABS(HR0370U) RA-WH-02-B 30G M9245 | 1 | |
| 2 | 76013-0070-02 | MEMBRANE-PANEL;PC W92.8 L164.9 M9G45(CTW) | 1 | ● ▲ |
| 3 | 74073-0023-00 | WINDOW-DISPLAY;ACRYL(HI855M) RC-SM-04-K 82555 20G | 1 | |
| 4 | 74051-0050-00 | CONTROL-PANEL(TC);HR0370U RA-WH-02-B 160G M9245 | 1 | |
| 5 | DE91-10064A | ASSY P.C.B-MAIN;230V50HZ NS VFD MBG45(CTW) | 1 | ● ▲ |
| 6 | 72724-0026-00 | SPRING-BUTTON;CS SWP PI0.7 D17/L25.8 | 1 | |
| 7 | 79109-0575-00 | ASSY CONTROL-PANEL;230V50HZ M9G45 P/WHT | 1 | ● ▲ |

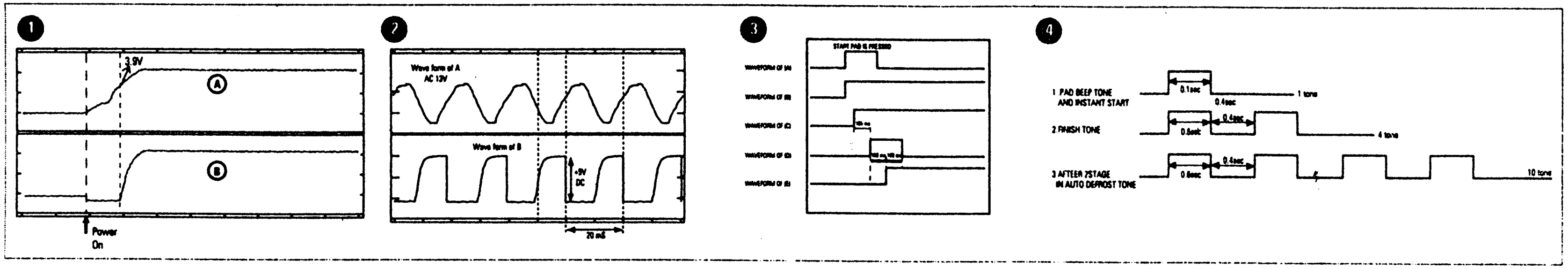
## Parts List - Standard Parts

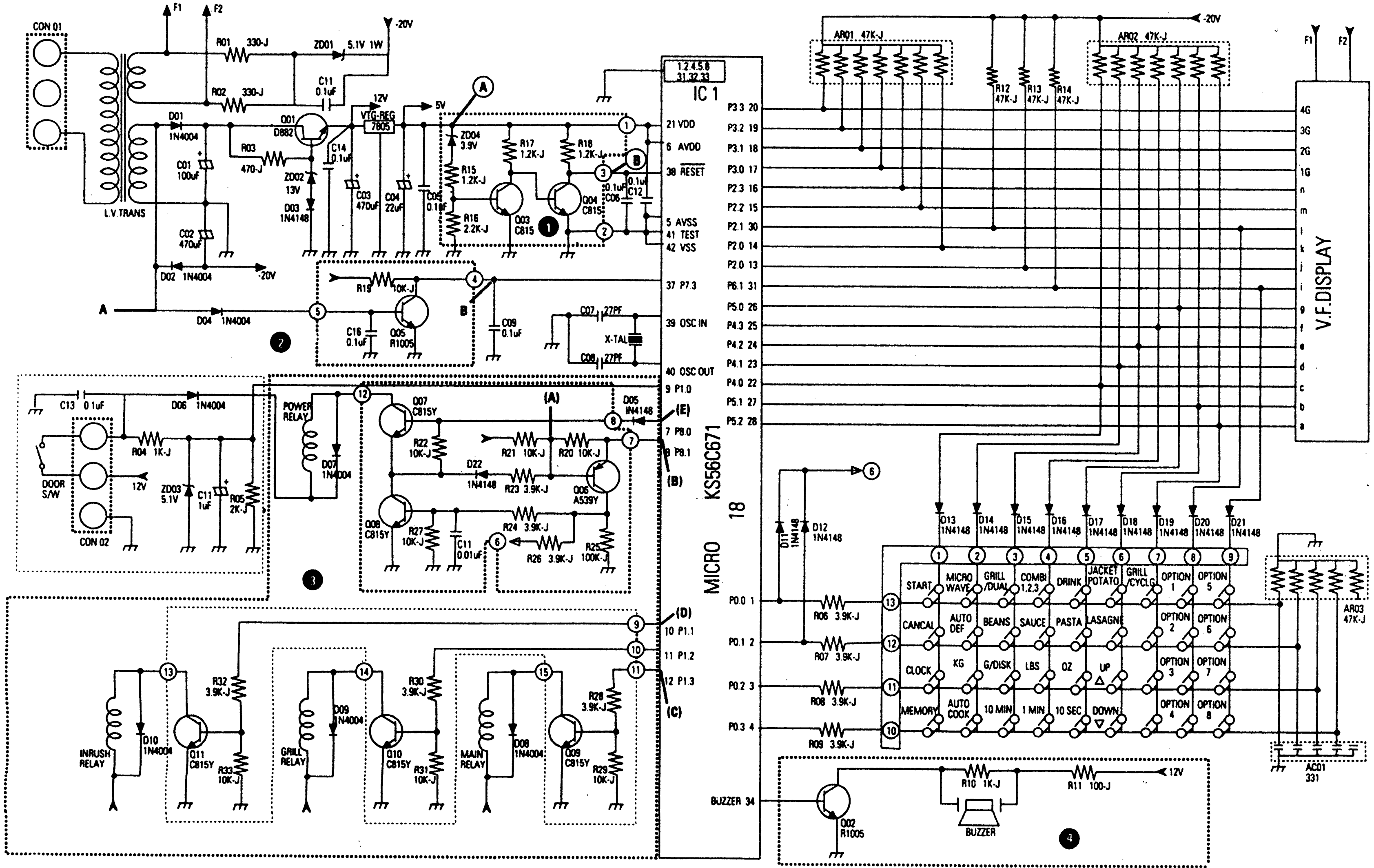
| Parts No. | Description / Specification | Q'ty | Remarks |
|---|---|---|---|
| 70859-800-311 | TAPE-SCOTCHPAR;POLYESTER FILM 3M 893 50W | 1 | |
| 77094-211-410 | BOLT-FLANGE;MSWR3 M5X10 FE,FZY | 2 | HI-UPP |
| 77094-211-410 | BOLT-FLANGE;MSWR3 M5X10 FE,FZY | 2 | HI-LOW |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 5 | P/OUT |
| 70504-0002-00 | SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH | 1 | P-CORD |
| 70504-0002-00 | SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH | 1 | MEM-PN |
| 70504-0002-00 | SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH | 1 | B/HVC |
| 70504-0004-00 | SCREW-ASSY TAP;TH 2S 4 L12+FIBER MSWR3 ZPC3 | 4 | CV/MOT |
| 70504-0019-00 | SCREW-ASSY MACHINE;PH M4X0.7P 8 MSWR10 SN1 WS | 2 | B/EART |
| 70504-0019-00 | SCREW-ASSY MACHINE;PH M4X0.7P 8 MSWR10 SN1 WS | 1 | N/BUSH |
| 77108-540-081 | SCREW-TAP PH;+2S-4X8 FE FZY | 1 | B/HI-U |
| 77128-240-085 | SCREW-TAP TH;TAP TH 2-4X8 FE FN | 2 | B/HEAT |
| 77128-240-085 | SCREW-TAP TH;TAP TH 2-4X8 FE FN | 1 | C/CEIL |
| 77128-540-101 | SCREW-TAP TH;2S-4*10 FR FZY | 2 | B/UPP |
| 77128-540-101 | SCREW-TAP TH;2S-4*10 FR FZY | 2 | G/AIR |
| 77128-540-101 | SCREW-TAP TH;2S-4*10 FR FZY | 1 | C/CLAM |
| 77154-202-910 | WASHER-SCREW;2S-5X12 | 4 | HVT |
| 77154-202-910 | WASHER-SCREW;2S-5X12 | 4 | MGT |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 2 | CN-BOX |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 1 | SU-MGT |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 1 | CV/AIR |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 2 | BD-LAT |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 8 | B-PLTE |
| 77154-203-820 | SCREW-A;2S-4X12 FE FZY | 2 | B/CVR |
| A0103-0010 | SCREW-ASSY TAPTITE;PH TC M4X8 SWRCH18A ZPC2 GLD WT | 2 | MO/DRV |
| A0103-0010 | SCREW-ASSY TAPTITE;PH TC M4X8 SWRCH18A ZPC2 GLD WT | 2 | TCO |

# Parts List - PCB Parts

| Parts No. | Description / Specification | Q'ty | Remarks |
|---|---|---|---|
| 73323-0003-003 | HOLDER-DIGITRON;PP(JI350) BLK | 1 | |
| 77199-0191-00 | MICOM;KS56C671-19 MBQ45/M9Q45/M6Q45 DIP | 1 | |
| DE26-20002A | TRANS-L.V;CE9245STC AC230V 50HZ AC13/AC2.9V | 1 | ⚠ |
| 70509-110-171 | WIRE-SO,COPPER;0.6X63MM | 1 | J01 |
| 71018-227-102 | R-CARBON;RD1/4P 1K-J | 1 | R04 |
| 71018-227-102 | R-CARBON;RD1/4P 1K-J | 1 | R11 |
| 71018-277-101 | R-CARBON;RD1/4TP 100-J | 1 | R10 |
| 71018-277-102 | R-CARBON;RD1/4TP 1K-J | 1 | R10 |
| 71018-277-202 | R-CARBON;RD1/4TP 2K-J | 1 | R05 |
| 71018-277-331 | R-CARBON;RD1/4TP 330-J | 1 | R01 |
| 71018-277-331 | R-CARBON;RD1/4TP 330-J | 1 | R02 |
| 71018-277-392 | R-CARBON;RD1/4TP 3.9K-J | 1 | R06 |
| 71018-277-392 | R-CARBON;RD1/4TP 3.9K-J | 1 | R07 |
| 71018-277-392 | R-CARBON;RD1/4TP 3.9K-J | 1 | R08 |
| 71018-277-392 | R-CARBON;RD1/4TP 3.9K-J | 1 | R09 |
| 71018-277-471 | R-CARBON;RD1/4TP 470-J | 1 | R03 |
| 71018-277-472 | R-CARBON;RD1/4TP 4.7K-J | 1 | R12 |
| 71018-277-472 | R-CARBON;RD1/4TP 4.7K-J | 1 | R13 |
| 71018-277-472 | R-CARBON;RD1/4TP 4.7K-J | 1 | R14 |
| 71097-001-005 | R-NETWORK;M06-1-R47K 6E473JYV(TAPG) | 1 | AR03 |
| 71097-001-007 | R-NETWORK;M08-1-R47K 8E473JYV(TAPG) | 1 | AR01 |
| 71097-001-007 | R-NETWORK;M08-1-R47K 8E473JYV(TAPG) | 1 | AR02 |
| 71417-065-270 | C-CERAMIC;CC45SL(TAPG)50V 27PF-K | 1 | C07 |
| 71417-065-270 | C-CERAMIC;CC45SL(TAPG)50V 27PF-K | 1 | C08 |
| 71607-402-004 | C-ELEC;CE 0.4W(TAPG)50V 1UF | 1 | C10 |
| 71607-402-033 | C-ELEC;CE 0.4W(TAPG)50V 22UF | 1 | C04 |
| 71607-402-293 | C-ELEC;CE0.4W35V1000UF(TAPG) | 1 | C02 |
| 71607-402-294 | C-ELEC;CE0.4W35V470UF(TAPG) | 1 | C03 |
| 71607-402-294 | C-ELEC;CE0.4W35V470UF(TAPG) | 1 | C03 |
| 72147-301-431 | TR-POWER;KSD882Y(TAPG) | 1 | Q01 |
| 72163-200-010 | DIODE ZENOR;1W 5.1V | 1 | ZD01 |
| 72163-200-010 | DIODE ZENOR;1W 5.1V | 1 | ZD03 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D02 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D04 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D06 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D07 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D08 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D09 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D10 |
| 72169-201-001 | DIODE-RECT;1N4004 | 1 | D22 |
| 73349-202-120 | CONNECTOR;JST B3B-XH-A/2521P03V000 | 1 | CON02 |
| 74537-001-001 | RESONATOR-CERA;CSA 4.19MG(TAPG) | 1 | ⚠ |
| A1100-0340 | C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB | 1 | C05 |
| A1100-0340 | C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB | 1 | C06 |
| A1100-0340 | C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB | 1 | C09 |
| A1100-0340 | C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB | 1 | C11 |
| A1100-0340 | C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB | 1 | C12 |
| A1100-0340 | C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB | 1 | C13 |
| A4060-0008 | TR-W/RESISTOR;KSR1005 300MW 100MA 50V EBN/4.7KR1 | 1 | Q02 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D03 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D05 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D11 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D12 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D13 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D14 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D15 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D16 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D17 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D18 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D19 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D20 |
| A4100-0003 | DIODE-SW;1N4148 1.2V 4.0NS T | 1 | D21 |
| A4106-0083 | DIODE-ZENER;UZP-13B 12.4/14.1V 20MA T | 1 | ZD02 |
| A6010-0468 | CONNECTOR-WAFER;YW396-03AV WHT | 1 | CON01 |
| B1113-0008 | C-NETWORK;CX EXFFP7331MDV 50V 331X7-M 8P | 1 | AC01 |
| A1305-0012 | BUZZER;CBE2220BA STICK | 1 | |
| A3068-0086 | RELAY;CS-1PD-1 DC12V16A | 1 | POWER |
| A3068-0086 | RELAY;CS-1PD-1 DC12V16A | 1 | MAIN |
| A3068-0086 | RELAY;CS-1PD-1 DC12V16A | 1 | INRUSH |
| A3068-0086 | RELAY;CS-1PD-1 DC12V16A | 1 | GRILL |
| A4008-1092 | IC-VOLT REGU;KA7805A TO-220AB 1A 0/125C | 1 | ⚠ |
| A4010-0053 | IC-HYBRID;SMW002 MB245 SIP | 1 | ⚠ |
| A4153-0079 | V.F.DISPLAY;SVM-4SM01 MWO | 1 | ⚠ |
| A6010-0609 | CONNECTOR-WAFER;FCZ254-13SL BLK | 1 | |

# PCB Diagram


❶
3.9V
Ⓐ
Ⓑ
Power On
❷
Wave form of A
AC 13V
Wave form of B
+5V DC
20 mS
❸
START PAD IS PRESSED
WAVEFORM OF (A)
WAVEFORM OF (B)
WAVEFORM OF (C)
WAVEFORM OF (D)
WAVEFORM OF (E)
❹
1 PAD BEEP TONE AND INSTANT START
0.1sec
0.4sec
1 tone
2 FINISH TONE
0.8sec
0.4sec
4 tone
3 AFTEER 2STAGE IN AUTO DEFROST TONE
0.8sec
0.4sec
10 tone


CON 01
L.V.TRANS
F1
F2
R01 330-J
R02 330-J
ZD01 5.1V 1W
-20V
C11 0.1uF
D01 1N4004
C01 100uF
C02 470uF
D02 1N4004
-20V
R03 470-J
Q01 D882
ZD02 13V
D03 1N4148
C14 0.1uF
12V
VTG-REG 7805
5V
C03 470uF
C04 22uF
C05 0.1uF
Ⓐ
ZD04 3.9V
R15 1.2K-J
R16 2.2K-J
R17 1.2K-J
R18 1.2K-J
Q03 C815
Q04 C815
Ⓑ
C06 0.1uF
C12 0.1uF
❶
A
D04 1N4004
R19 10K-J
C16 0.1uF
Q05 R1005
B
C09 0.1uF
❷
C07 27PF
X-TAL
C08 27PF
C13 0.1uF
D06 1N4004
R04 1K-J
DOOR S/W
12V
ZD03 5.1V
C11 1uF
R05 2K-J
CON 02
POWER RELAY
D07 1N4004
Q07 C815Y
R22 10K-J
D22 1N4148
R21 10K-J
R20 10K-J
R23 3.9K-J
Q06 A539Y
Q08 C815Y
R27 10K-J
C11 0.01uF
R24 3.9K-J
R26 3.9K-J
R25 100K-J
(A)
D05 1N4148
(E)
(B)
❸
INRUSH RELAY
D10 1N4004
Q11 C815Y
R32 3.9K-J
R33 10K-J
GRILL RELAY
D09 1N4004
Q10 C815Y
R30 3.9K-J
R31 10K-J
MAIN RELAY
D08 1N4004
Q09 C815Y
R28 3.9K-J
R29 10K-J
(D)
(C)
1,2,4,5,8 31,32,33
IC 1
21 VDD
6 AVDD
38 RESET
5 AVSS
41 TEST
42 VSS
37 P7.3
39 OSC IN
40 OSC OUT
9 P1.0
7 P8.0
8 P8.1
10 P1.1
11 P1.2
12 P1.3
MICRO KS56C671 18
P3.3 20
P3.2 19
P3.1 18
P3.0 17
P2.3 16
P2.2 15
P2.1 30
P2.0 14
P2.0 13
P6.1 31
P5.0 26
P4.3 25
P4.2 24
P4.1 23
P4.0 22
P5.1 27
P5.2 28
P0.0 1
P0.1 2
P0.2 3
P0.3 4
BUZZER 34
AR01 47K-J
-20V
R12 47K-J
R13 47K-J
R14 47K-J
AR02 47K-J
F1
F2
V.F.DISPLAY
4G
3G
2G
1G
n
m
l
k
j
i
g
f
e
d
c
b
a
D11 1N4148
D12 1N4148
D13 1N4148
D14 1N4148
D15 1N4148
D16 1N4148
D17 1N4148
D18 1N4148
D19 1N4148
D20 1N4148
D21 1N4148
R06 3.9K-J
R07 3.9K-J
R08 3.9K-J
R09 3.9K-J
START
MICRO WAVE
GRILL /DUAL
COMBI 1,2,3
DRINK
JACKET POTATO
GRILL /CYCLG
OPTION 1
OPTION 5
CANCAL
AUTO DEF
BEANS
SAUCE
PASTA
LASAGNE
OPTION 2
OPTION 6
CLOCK
KG
G/DISK
LBS
OZ
UP △
OPTION 3
OPTION 7
MEMORY
AUTO COOK
10 MIN
1 MIN
10 SEC
DOWN ▽
OPTION 4
OPTION 8
AR03 47K-J
AC01 331
R10 1K-J
R11 100-J
12V
Q02 R1005
BUZZER
❹